PERFORMANCE

Processor
Processor Family
10th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® W Processor

<table>
<thead>
<tr>
<th>Processor Name</th>
<th>Cores</th>
<th>Threads</th>
<th>Base Frequency</th>
<th>Max Frequency</th>
<th>Cache</th>
<th>Memory Support</th>
<th>Processor Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core i5-10400H</td>
<td>4</td>
<td>8</td>
<td>2.6GHz</td>
<td>4.6GHz</td>
<td>8MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10750H</td>
<td>6</td>
<td>12</td>
<td>2.6GHz</td>
<td>5.0GHz</td>
<td>12MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10850H</td>
<td>6</td>
<td>12</td>
<td>2.7GHz</td>
<td>5.1GHz</td>
<td>12MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10875H</td>
<td>8</td>
<td>16</td>
<td>2.3GHz</td>
<td>5.1GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i9-10850H</td>
<td>8</td>
<td>16</td>
<td>2.4GHz</td>
<td>5.1GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i9-10980HK</td>
<td>8</td>
<td>16</td>
<td>2.4GHz</td>
<td>5.1GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Xeon W-10855M</td>
<td>6</td>
<td>12</td>
<td>2.8GHz</td>
<td>5.1GHz</td>
<td>12MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Xeon W-10885M</td>
<td>8</td>
<td>16</td>
<td>2.4GHz</td>
<td>5.3GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics</td>
</tr>
</tbody>
</table>

Operating System
- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Type</th>
<th>Memory</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVIDIA Quadro RTX 3000</td>
<td>Discrete</td>
<td>6GB GDDR6</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA Quadro RTX 4000 Max-Q</td>
<td>Discrete</td>
<td>8GB GDDR6</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA Quadro RTX 5000 Max-Q</td>
<td>Discrete</td>
<td>16GB GDDR6</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA Quadro Ti1000</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA Quadro T2000</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>DirectX 12</td>
</tr>
</tbody>
</table>

Monitor Support
Supports up to 5 independent displays via native display and 4 external monitors; supports external monitors via HDMI® (up to 4K@60Hz), USB-C (up to 4K@60Hz) or Thunderbolt™ (one supports up to 5K@60Hz and the other supports up to 4K@60Hz)

Chipset
Intel WM490 chipset

Memory

Memory Type
- DDR4-2933 ECC
- DDR4-2933 non-ECC

Notes:
- Non-ECC memory is actually DDR4-3200 but may run at DDR4-2933 due to processor limitation

Memory Slots
Four DDR4 SO-DIMM slots, dual-channel capable

Memory Protection
ECC on models with ECC DIMMs and Xeon processor
Max Memory
Up to 128GB

Notes:
• The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage
Storage Support
Up to two drives, 2x M.2 2280 SSD
• M.2 2280 SSD up to 2TB each

RAID
RAID 0/1 support

Storage Type
<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe 3.0 x4</td>
<td>-</td>
<td>Opal2</td>
</tr>
</tbody>
</table>

Removable Storage
Optical
Not Support

Card Reader
SD card reader

Multi-Media
Audio Chip
High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers
Stereo speakers, Dolby® Atmos® sound system

Microphone
• Dual array microphone, far-field
• Not configured

Camera
• 720p, with ThinkShutter, fixed focus
• IR & 720p, with ThinkShutter, fixed focus
• Not configured

Battery
Battery
Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

Max Battery Life
MobileMark® 2014: 16.4 hr
MobileMark 2018: 10.3 hr

Notes:
• All battery life claims are approximate maximum and based on results using the MobileMark 2014 and/or MobileMark 2018 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter
• 170W slim tip AC adapter
• 230W slim tip AC adapter

DESIGN
## Display

### Size, Resolution, Touch Type, Brightness, Surface, Aspect Ratio, Contrast Ratio, Color Gamut, Viewing Angle, Key Features

<table>
<thead>
<tr>
<th>Size</th>
<th>Resolution</th>
<th>Touch Type</th>
<th>Brightness</th>
<th>Surface</th>
<th>Aspect Ratio</th>
<th>Contrast Ratio</th>
<th>Color Gamut</th>
<th>Viewing Angle</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.6”</td>
<td>FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>500 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>1200:1</td>
<td>72% NTSC</td>
<td>Dolby Vision™, HDR</td>
</tr>
<tr>
<td>15.6”</td>
<td>FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>300 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>700:1</td>
<td>72% NTSC</td>
<td>-</td>
</tr>
<tr>
<td>15.6”</td>
<td>UHD (3840x2160)</td>
<td>None</td>
<td>IPS</td>
<td>600 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>1400:1</td>
<td>100% Adobe® RGB</td>
<td>-</td>
</tr>
<tr>
<td>15.6”</td>
<td>UHD (3840x2160)</td>
<td>Multi-touch</td>
<td>OLED</td>
<td>SDR 400nit, HDR 500nit (peak)</td>
<td>Anti-reflection, Anti-smudge</td>
<td>16:9</td>
<td>1000000:1</td>
<td>100% DCI-P3</td>
<td>Dolby Vision, HDR</td>
</tr>
</tbody>
</table>

### Notes:
- California Electronic Waste Recycling Fee
  In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to [https://www.calrecycle.ca.gov/Electronics/Consumer](https://www.calrecycle.ca.gov/Electronics/Consumer)

### Color Calibration
- X-Rite Pantone factory color calibration (UHD display)
- Not configured

### Touchscreen
- On-cell touch, supports 10-point touch
- Non-touch

### Input Device
- **Pen**
  Not support
- **Keyboard**
  6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad
- **Keyboard Backlight**
  LED backlight
- **UltraNav™**
  3-button TrackPoint® pointing device and 2-button Mylar® surface multi-touch touchpad

### Mechanical

#### Dimensions (WxDxH)

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch models</td>
<td>375.4 x 252.3 x 25.25-32.2 mm (14.24 x 9.67 x 0.99-1.27 inches)</td>
</tr>
<tr>
<td>Non-touch models</td>
<td>375.4 x 252.3 x 24.5-31.45 mm (0.96-1.24 inches)</td>
</tr>
</tbody>
</table>

### Weight

- 2.74 kg (6.05 lbs)

### Case Color

- Black

### Case Material

- PPS695 + GF 50% (top), PPS + GF (bottom)

## CONNECTIVITY

### Network
Onboard Ethernet
- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth™
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- Not configured

WWAN
- Wireless WAN upgradable
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card
- Not configured

SIM Card
Not Support

NFC
Not support

Ports
Standard Ports
- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 1 (support data, PD and DP)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data, PD and DP)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Notes:
- Depending on many factors, actual data transfer speed may be lower than theoretical speed

Optional Ports
- 1x Nano-SIM card slot (WWAN models)
- 1x Smart Card Reader

Monitor Cable
- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort™ Adapter
- Lenovo USB-C to VGA Adapter
- Not configured

SECURITY & PRIVACY

Security
Security Chip
- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks
Kensington® Security Slot

Smart Card Reader
- Smart card reader
- Not configured

Fingerprint Reader
Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security
- Power-on password
- Supervisor password
- Hard disk password
Self-healing BIOS

Other Security
- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management
- Intel vPro Technology, DASH
- None

SERVICE

Warranty
Base Warranty
- 1-year depot service
- 1-year limited onsite service
- 1-year depot with 2-year system board service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ACCESSORIES

Bundled Accessories
Not Support

CERTIFICATIONS

Green Certifications
- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS

Other Certifications
Mil-Spec Test
MIL-STD-810G military test passed

ISV Certifications
Please visit www.thinkworkstations.com/isv-certifications/